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land, on which the stations for meteorological and tidal observations were marked, so as to show their geographical distribution. And he availed himself of the opportunity to give a brief account (derived from these observations) of a cyclonic gale, accompanied with a sudden fall of the barometer and a corresponding rise of the tide, which was felt over the whole of Ireland on the 6th of last month.

The Rev. Samuel Haughton stated, in confirmation of the President's remarks, that the returns from the tidal stations showed an elevation of water varying from ten to eighteen inches above the mean height, corresponding to the period of greatest depression of the barometer. This depression would, however, only account for part of the elevation of water, the rest must be attributed to the force of the wind.

Mr. W. Hogan read an analysis of the meteorological observations communicated by Mr. G. Yeates, and published in the Proceedings.

"The violent and fatal epidemics, affecting both animal and vegetable life, which prevailed during the preceding seven years, may have been, and probably were, in some manner connected with the state of the atmosphere; and it has occurred to me that an examination of the state of the weather during that period might be interesting and possibly instructive.

"The quantity of rain which falls at any period, in this climate, is, in general, indicative of the state in which both the barometer and thermometer stood at the time. Bright skies and serene weather are in general accompanied by a higher mark both of the barometer and thermometer, and on the contrary the mark is lower in cloudy, damp weather. It has, therefore, occurred to me that a table showing the quantity of rain which fell in each month during those seven years would, for this climate, give a general view of the state of the atmosphere at the time. The Royal Irish Academy has published

Mr. Yeates' reports of his rain-gauge for the last seven years, from 1843 to 1849 inclusive, and I have constructed my table from them.

"I began by arranging in so many parallel columns the monthly quantity of rain which fell in the seven years commencing in January, 1843, and ending in December, 1849, and having then ascertained the mean quantity for each month during those years, I assumed that it was the average quantity of rain in that month. On comparing this mean quantity with the actual fall of rain, I was surprised at finding the great irregularity which it indicated. It appeared that there was not any one month which was either wet or dry, or of average weather, during the whole of that period. The most settled weather was in August and December, and in those months the weather was either very wet or very dry; each was for four years very wet, and for three years very dry.

"I am aware that a period of seven years is too short to afford a satisfactory average, but Mr. Yeates' tables did not go farther back, and those years were marked by the epidemics I have alluded to. We had cholera, influenza, murrain, and the potato disease; on that account they deserved a separate consideration, even if the rain tables had gone further back.

"In classifying the varieties of weather, as indicated by the quantity of rain which fell, I took the mean, or any quantity within a quarter of an inch, more or less, of rain in that month, as average weather. For example, I found that about two inches of rain was the mean quantity for the month of June; I marked it as average weather in June, if the fall of rain was less than two inches and a quarter, and more than one inch and three-quarters. If more than two inches and a quarter, I marked it as decidedly wet; and if less than an inch and three-quarters, as decidedly dry. June was four times very dry and three times very wet. Adopting this scale, I found that during those seven years, the weather had a remarkable tendency to extremes; that there were but eighteen months of average weather; that thirty-two months were decidedly wet, and thirty-four decidedly dry; and also that there was no apparent order in the variations of the weather. For instance, the average fall of rain in May, was an inch and three-quarters; in May, 1843, more than four inches and a half of rain fell; in May, 1844, not much more than a quarter of an inch; and in May, 1845, very nearly the average quantity. This great and striking difference of weather in the same month, in successive years, must have had a great effect on vegetation, as well as on the state of the atmosphere.

" An inspection of the table thus prepared for seven years will prove that there were great irregularities in the state of the weather during the whole of that period. There was not a month of average weather in 1846, there was but one in 1845, and but two in 1844 and 1848.

" The year 1847 was decidedly a dry one, as there only fell twenty-one and a half inches of rain, of which nearly three inches, almost a seventh of the whole, fell in December.

" In 1846 thirty inches and a half of rain fell, and in 1848 upwards of thirty-one inches. See Table No. 1.

" The irregularity of the weather will be more striking, if we omit from the table all figures except those indicating the greatest and least monthly fall of rain in each year. See Table No. 2.

" In 1843, most rain fell in May, and least in December.

" In 1844, most rain fell in November, and least in May.

" In 1845, most rain fell in Jan., and least in September.

" In 1846, most rain fell in April, and least in December.

" In 1847, most rain fell in December, and least in July.

" In 1848, most rain fell in August, and least in May.

" In 1849, most rain fell in October, and least in June.

" Another remarkable irregularity in the weather, as indicated by the monthly fall of rain, is, that those months in which the greatest and least fall of rain took place were not, with one exception, those whose mean quantity of rain was greatest or least. February and March have the lowest mean, and yet neither was ever the dryest month in the year. August and October have the highest mean, and yet each was only once the wettest month in the year. See Table No. 3.

"It would be very interesting to extend these inquiries over the whole country. The Academy has the rain tables kept in Athlone by order of the Board of Works, and I hope to classify them in a similar manner as soon as they are published.

"If it should appear that the climate of Ireland is liable to such great vicissitudes, it might be of importance to call the attention of agriculturalists to the fact, lest, by the occurrence of one or two favourable seasons, they might be induced to cultivate crops which are dependent on dry warm weather at any period of their progress to maturity. The following remark occurs in Captain Larcom's Report to His Excellency the Lord Lieutenant, which is prefixed to his Returns of the Agricultural Produce of Ireland in the year 1849, p. vi.:—'The success of any crop must necessarily depend in a great degree on the natural fitness of the soil and on the character of the climate; and in a country like this, the wheat crop must, from the latter cause, be always a hazardous one.'

"Captain Larcom states, in the same Report, that the average acreable produce of wheat in Ireland, in the year 1847, was $6\frac{6}{10}$ barrels; in 1848, was $4\frac{5}{10}$; and in 1849, was $5\frac{3}{10}$ barrels. It is remarkable that the fall of rain in those years in Dublin varied very nearly inversely in the same proportion; in 1847, the fall of rain was twenty-one and a half inches; in 1848, it was thirty-one inches; and in 1849, it was twenty-seven three-quarter inches. Oats and barley seem to have been but little affected."

TABLE I.

Showing the monthly Quantity of Rain which fell in Dublin, in seven Years (1843 *to* 1849, *inclusive*), *as recorded by* MR. YEATES, *and published in the Proceedings of the Royal Irish Academy.*

MONTH.	1843.	1844.	1845.	1846.	1847.	1848.	1849.	Monthly Mean.
January, . . .	2·589	1·031	3·495	2·843	2·598	2·005	3·248	2·544
February, . .	1·635	2·303	·762	·967	1·577	2·744	·750	1·534
March, . . .	1·643	2·042	1·412	2·660	·982	2·389	1·052	1·739
April, ...	2·645	·545	·909	5·082	2·862	2·992	2·491	2·503
May, ...	4·644	·316	1·680	1·652	1·876	·711	1.923	1·814
June, ...	2·277	1·539	3·131	1·474	1·345	3·660	·560	2·005
July, ...	1·773	2·148	3·170	2·883	·800	2·169	2·237	2·168
August, . . .	1·541	3·475	2·523	4·105	1·240	4·443	3·234	2·936
September, . .	·637	1·845	·705	2·624	1·267	2·520	3·432	1·861
October, . . .	3·302	2·530	2·677	3·937	1·762	3·305	3·707	3·060
November, . .	2·425	2·742	2·810	1·648	2·315	1·477	1·689	2·300
December, . .	·138	2·192	1·539	·713	2·968	2·667	3·309	1·938
Rain in the year, . .	25·249	23·711	26·628	30·488	21·652	31·085	29·732	26·407
Mean Temperature, . .	50·6	50·1	48·3	52·1	50	49·5	49	

In this table the average quantities are printed in large figures; and those above an average have the usual figures underlined.

Average weather in seven years, .	18	months.
More rain than the average, do. . .	32	,,
Less than average, do. . .	34	,,

Actual average of all the months, in seven years, 2·200.

TABLE II

Showing the Month in each Year, from January, 1843, *to December,* 1849, *in which the greatest and least Quantity of Rain fell in Dublin.*

MONTH.	1843.	1844.	1845.	1846.	1847.	1848.	1849.	Monthly Mean.
January, . . .			w. 3·495					2·544
February, . .								1·534
March, . . .								1·739
April, ...				w. 5·082				2·503
May, ...	w. 4·644	D. ·316				D. ·711		1·814
June, ...							D. ·560	2·005
July, ...					D. ·800			2·168
August, . . .						w. 4·443		2·936
September, . .			D. ·705					1·860
October, . . .							w. 3·907	3·060
November, . .		w. 3·742						2·300
December, . .	D. ·138			D. ·713	w. 2·968			1·938
Mean Temperature, . .	50·6	50·1	48·3	52·1	50	49·5	49	

The letter w. has been placed over the number indicating the greatest monthly fall of rain in the year, and the letter D. over the number indicating the least monthly fall of rain in the year; w. indicating the wettest, and D. the dryest month in the year.

Table III.

Showing the Month in each Year, from January, 1843, *to December,* 1849, *in which the greatest and least Quantity of Rain fell in Dublin; the Month whose mean Quantity of Rain is greatest being placed first, and the others in rank of their mean Quantity of Rain.*

Month.	1843.	1844.	1845.	1846.	1847.	1848.	1849.	Monthly Mean.
October, . . .							3·907	3·060
August, . . .						4·143		2·936
January, . . .			3·495					2·544
April, ...				5·082				2·503
November, . .		3·742						2·300
July, ...					·800			2·116
June, ...							·560	2·005
December, . .	·138			·713	2·968			1·938
September, . .			·705					1·860
May, ...	4·644	·316				·711		1·814
March, . . .								1·739
February, . .								1·534

The numbers indicating the greatest monthly fall of rain in each year are underlined.

The monthly mean varies from three inches to an inch and a half.

Professor Allman read a paper on the reproductive system and development of the gemmæ in *Paludicella articulata.*

"All the fresh-water polyzoa produce true ova, which are formed in a definite organ or ovary. From the existence of a